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## A Preliminary Report on the Marsh and Aquatic Dicotyledonous Flora of Iowa

By PAUL H. MONSON

As a part of the plan to complete a survey of the flora of Iowa, a study of the distribution of marsh and aquatic dicotyledonous phanerogams of the state was undertaken in the fall of 1950. This study, based on the collection in the herbaria of Iowa State College and the State University of Iowa in addition to the limited field experience of the author, included 103 species and varieties of plants representing 60 genera of 25 families. The Scrophulariaceae account for 14 species in 8 genera, *Ranunculus* is represented by 8 species, *Polygonum* by 7.

Without attempting to show all aspects of the picture it shall be the purpose of this paper to illustrate some of the distribution patterns brought out in the study.

General distribution throughout the state is manifested by several species including *Polygonum coccineum* Muhl., *P. punctatum* Ell., *Ceratophyllum demersum* L., *Lythrum alatum* Pursh, *Cicuta maculata* L., *Asclepias incarnata* L., *Utricularia vulgaris* L., and *Bidens cernua* L. These species have been collected in all sections of the state where proper habitat exists.

Among the most restricted distributions are those of the species which are characteristic of the fens found in the lake region of northern Iowa and along the upper reaches of the Des Moines River. *Lobelia kalmii* L., *Utricularia minor* L., and *U. intermedia* Hayne are three such species.

Also commonly associated with the fens but of somewhat more general distribution are *Parnassia glauca* Raf. and *Gentiana procera* Holm.

Another greatly restricted group includes two species typical of eastern United States and Canada and represented in Iowa by a few collections from the cold water streams of the so-called "driftless" area. These species are *Ranunculus aquatilis* L. var. *capillareus* (Thuill.) DC. Prodr. and *Veronica anagallis-aquatica* L.

Among the many areas represented by specimens examined during this study, none supports a greater variety and abundance of marsh and aquatic vegetation than those parts of northern Iowa which were glaciated during the Pleistocene Epoch. Although the factors affecting distribution were not studied, it is apparent that

several species are quite closely restricted to the above mentioned areas. Some of these species are *Potentilla palustris* (L.) Scop., *Callitriche verna* L., *Epilobium leptophyllum* Raf., *E. glandulosum* Lehm., *Myriophyllum heterophyllum* Michx., and *Menyanthes trifoliata* L. var. *minor* Raf.

Of secondary importance as areas supporting marsh and aquatic vegetation are the bottom lands of the Mississippi and lower Cedar and Iowa Rivers. Many of the plant species to be found in these areas are at the northwestern limits of their ranges. *Hibiscus militaris* Cav. is such a species, being found in considerable abundance in southeastern Iowa even though its distribution is centered in states to the south and east. Other species which exhibit this pattern of distribution are *Rumex verticillatus* L., *Ludwigia alternifolia* L., and *L. palustris* (L) Ell. var. *americana* (DC) Fern. & Grisc.

In addition to those species which show restricted distributions on the basis of rather extensive collections we have a number of species which are known by only one or two collections. Included in this group are *Ranunculus circinatus* Sibth. var. *subrigidus* (Drew) Benson, known from one station in Clay Co. and one in Lyon Co.; *Parnassia parviflora* DC., known from a single station in Linn Co.; *Decodon verticillatus* (L.) Ell., known from a single station in Linn Co.; *Proserpinaca palustris* L., known from a single station in Muscatine Co.; *Gratiola virginiana* L., known from a single station in Decatur Co.; *Utricularia gibba* L. known from one station in Johnson Co. and one in Muscatine Co.; and *Megalodonta beckii* (Torr.) Greene, collected frequently but only in Lake Okoboji in Dickinson Co. and Clear Lake in Cerro Gordo Co. In many cases these rare species have not been collected or otherwise reported within the last twenty-five years. Additional intensive collecting will undoubtedly result in extension of the now known ranges of many of these species.

#### Bibliography

- Monson, P. H. 1952. The marsh and aquatic dicotyledonous flora of Iowa. Unpublished M. S. Thesis, Iowa State College Library, Ames.

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